

AMENDMENTS TO THE CLAIMS

1. (Currently amended) A method for facilitating maintaining connectivity between a mobile ~~network~~ node and a correspondent node after the mobile ~~network~~ node changes a first address to a second address, the second address being different than the first address, the method comprising performing, by the mobile node, the steps of:

creating a connection to the correspondent node and communicating from the mobile node to the correspondent node over the connection, while the mobile node is at the first address;

registering the second address, for the mobile node, with an authoritative name server without using a home agent, wherein the registering step comprises:

specifying the second address for the mobile node; and

specifying a supplementary value that ensures the second address will not be cached within non-authoritative name servers;

receiving, at the mobile node while at the second address, a communication from the correspondent node that indicates that a destination of the communication is the second address;

editing the communication such that the destination is the first address; and

following the editing, making the communication available to a client program executing on the mobile node.

2. (Currently amended) The method of claim 1 further comprising performing, by the mobile node, the steps of:

prior to registering the second address, connecting to a new network location;

receiving, in response to the connecting and prior to the registering, the second address differing from the first address previously registered with the authoritative name server; and

issuing, subsequent to registering the second address, a first binding update to [[a]] the correspondent node ~~to which a connection was previously created while the mobile node resided at the first address,~~ wherein a specified destination address for the first binding update specifies a first correspondent node address.

3. (Previously presented) The method of claim 2 further comprising the steps of:
receiving, by the mobile node, a binding update acknowledgement from the
correspondent node; and
restoring a disrupted connection between the mobile node and correspondent node.

4. (Previously presented) The method of claim 2 wherein the mobile node performs,
in response to issuing the first binding update, the further steps of:
registering a binding update failure with regard to the first binding update issued to the
correspondent node at the first correspondent node address; and
issuing a naming query requesting a current address of the correspondent node.

5. (Previously presented) The method of claim 4 further comprising performing, by
the mobile node, steps of:
receiving a naming query response to the naming query including a second correspondent
node address for the correspondent node that differs from the first correspondent node address;
and
issuing a second binding update to the correspondent node, wherein a specified
destination address for the second binding update specifies the second correspondent node
address.

6. (Previously presented) The method of claim 2 wherein the new network location
resides outside a home network of the mobile node, and wherein the method comprises the
further step of:
establishing a tunnel connection between the mobile node and a virtual private network
server; and
receiving, by the mobile node, a local network address specified by the virtual private
network server, wherein the second address corresponds to the local network address.

7. (Previously presented) The method of claim 2 further comprising the step of:

initiating, by the mobile node, a binding connection through a rendezvous server residing outside the home network.

8. (Previously presented) The method of claim 1 wherein specifying the supplementary value comprises specifying a time-to-live (TTL) value of zero.

9. (Previously presented) The method of claim 2 further comprising:
issuing a naming query requesting a current address of the correspondent node, before receiving a response to the first binding update;
receiving a naming query response to the naming query including a second correspondent node address for the correspondent node;
determining that the second correspondent node address differs from the first correspondent node address; and
issuing a second binding update to the correspondent node, wherein a specified destination address for the second binding update specifies the second correspondent node address.

10. (Previously presented) The method of claim 1 wherein the authoritative name server is a domain name system (DNS) server.

11. (Currently amended) A computer-readable medium including computer-executable instructions for facilitating maintaining connectivity between a mobile network node and a correspondent node after the mobile network node changes addresses a first address to a second address and the correspondent node changes from a third address to a fourth address, the second address being different than the first address and the second address being different from the fourth address, the computer-executable instructions facilitating performing, by the mobile node, the steps of:

creating a connection to the correspondent node and communicating from the mobile node to the correspondent node over the connection, while the mobile node is at the first address and the correspondent node is at the third address;

detecting, while the communication session is open, that the second address has been assigned to the mobile node;

registering the second address, for the mobile node, with an authoritative name server without using a home agent, wherein the registering step comprises:

specifying the second address for the mobile node; and

specifying a supplementary value that ensures the second address will not be cached within non-authoritative name servers;

receiving from the authoritative name server an indication that the correspondent node is at the fourth address; and

communicating from the mobile node to the correspondent node over the connection, while the mobile node is at the second address and the correspondent node is at the fourth address.

12. (Currently amended) The computer-readable medium of claim 11 further comprising computer-executable instructions for performing, by the mobile node, the steps of:
- prior to registering the second address, connecting to a new network location;
 - receiving, in response to the connecting and prior to the registering, the second address differing from the first address previously registered with the authoritative name server; and
 - issuing, subsequent to registering the second address, a first binding update to [[a]] the correspondent node to which a connection was previously created while the mobile node resided at the first address, wherein a specified destination address for the first binding update specifies a first correspondent node the third address.

13. (Canceled)

14. (Previously presented) The computer-readable medium of claim 12 further comprising computer-executable instructions for performing, by the mobile node, in response to issuing the first binding update, the further steps of:

registering a binding update failure with regard to the first binding update issued to the correspondent node at the first correspondent node address; and

issuing a naming query requesting a current address of the correspondent node.

15. (Currently amended) The computer-readable medium of claim 14 further comprising computer-executable instructions for performing, by the mobile node, the steps of:

~~receiving a naming query response to the naming query including a second correspondent node address for the correspondent node that differs from the first correspondent node address~~
the indication from the authoritative name server in response to the naming query; and

issuing a second binding update to the correspondent node, wherein a specified destination address for the second binding update specifies the second correspondent node address.

16. (Previously presented) The computer-readable medium of claim 12 wherein the new network location resides outside a home network of the mobile node, and further comprising computer-executable instructions for facilitating performing the steps of:

establishing a tunnel connection between the mobile node and a virtual private network server; and

receiving, by the mobile node, a local network address specified by the virtual private network server, wherein the second address corresponds to the local network address.

17. (Original) The computer-readable medium of claim 12 further comprising computer-executable instructions for:

initiating, by the mobile node, a binding connection through a rendezvous server residing outside the home network.

18. (Previously presented) The computer-readable medium of claim 11 wherein specifying the supplementary value comprises specifying a time-to-live (TTL) value of zero.

19. (Currently amended) The computer-readable medium of claim ~~[[12]]~~ 11 further comprising computer-executable instructions for:

following the step of detecting, issuing a naming query requesting a current address of the correspondent node ~~, before receiving a response to the first binding update without first attempting to communicate with the correspondent node at the third address;~~

receiving the indication as a naming query response to the naming query, the indication including ~~a second correspondent node~~ the fourth address for the correspondent node;

determining that the ~~second correspondent node~~ fourth address differs from the ~~first correspondent node~~ third address; and

issuing a ~~second~~ binding update to the correspondent node, wherein a specified destination address for the ~~second~~ binding update specifies the ~~second correspondent node~~ fourth address.

20. (Previously presented) The computer-readable medium of claim 11 wherein the authoritative name server is a domain name system (DNS) server.

21. (Currently amended) A mobile ~~network~~ node facilitating maintaining connectivity with a correspondent node after changing network addresses, the mobile ~~network~~ node including a communications protocol stack comprising computer-executable instructions for facilitating maintaining connectivity between ~~[[a]] the mobile network node and [[a]] the~~ correspondent node after the mobile ~~network~~ node changes a first address to a second address, the second address being different than the first address, the computer-executable instructions facilitating performing, by the mobile node, the steps of:

creating a connection to the correspondent node and communicating from the mobile node to the correspondent node over the connection, while the mobile node is at the first address;

determining, via a policy maintained by the mobile node, that the mobile node is located outside a security domain of a home network of the mobile node;

establishing a virtual private network tunnel connection through a virtual private network server, an address of the virtual private network server being specified by the policy;

receiving, from the virtual private network server, the second address for the mobile node; and

registering the second address with an authoritative name server without using a home agent, wherein the registering step comprises:

specifying the second address for the mobile node; and

specifying a supplementary value that ensures the second address will not be cached within non-authoritative name servers; and

for each communication to be transmitted to the correspondent node, determining, prior to transmitting the communication, a current address for the correspondent node by issuing a naming query for the correspondent node.

22. (Currently amended) The mobile network node of claim 21 further comprising computer-executable instructions for performing, by the mobile node, the steps of:

prior to establishing the virtual private network tunnel connection, connecting to a new network location; and

issuing, subsequent to registering the second address, a first binding update to [[a]] the correspondent node ~~to which a connection was previously created while the mobile node resided at the first address~~, wherein a specified destination address for the first binding update specifies a first correspondent node address received in response to the naming query.

23. (Original) The mobile network node of claim 22 further comprising computer-executable instructions for performing the steps of:

receiving, by the mobile node, a binding update acknowledgement from the correspondent node; and

restoring a disrupted connection between the mobile node and correspondent node.

24. – 26. (Canceled)

27. (Original) The mobile network node of claim 22 further comprising computer-executable instructions for:

initiating, by the mobile node, a binding connection through a rendezvous server residing outside the home network.

28. (Previously presented) The mobile network node of claim 21 wherein specifying the supplementary value comprises specifying a time-to-live (TTL) value of zero.

29. (Currently amended) The mobile network node of claim [[22]] 21 further comprising computer-executable instructions for:

~~issuing a naming query requesting a current address of the correspondent node, before receiving a response to the first binding update;~~

receiving a naming query response to the naming query including a ~~second correspondent node~~ the current address for the correspondent node;

determining that the ~~second correspondent node~~ current address differs from ~~the first correspondent node~~ a previous address for the correspondent node; and

issuing a ~~second~~ binding update to the correspondent node, wherein a specified destination address for the ~~second~~ binding update specifies the ~~second correspondent node~~ current address.

30. (Previously presented) The mobile network node of claim 21 wherein the authoritative name server is a domain name system (DNS) server.